A PROPOSAL TO THE SELBY FOUNDATION FROM NEW COLLEGE

January 20, 1972

INTRODUCTION:

New College, the Sarasota community, the Selby Foundation and indeed the whole State of Florida are concerned about the threats to our environment. It is beyond the capacity of any single institution to avert the total problem, but it is at least possible that a concerted effort of all concerned can have a marked effect on the specific problem of the future of Sarasota Bay and its related eco-systems.

If adequately and continuingly funded, and backstopped by a Citizens Advisory Committee of such a diversity of interests no bias can be assumed, New College is the ideal structure upon which to build a Gulf-coast Environmental Studies program. There must be such an unquestioned objectivity of approach that the Fund which supports it never becomes a lever to be used by either environmentalists or commercial interests. Its Advisory Committee must and will have the stature to enhance public understanding of environmental problems, and to give testimony at public hearings and other public gatherings, not as a partisan group, but rather as a collectively expert amicus curiae.

This proposal to the Selby Foundation addresses itself in a realistic way to this possibility. We ask careful consideration of its merits, its promise for the future of our community and its validity as an optimum utilization of a qualified and heretofore under-used resource of our area.

THE DIMENSIONS OF THE PROBLEM

1. From Cedar Keys to Naples there exists a unique sub-tropical estuarian environment, a mangrove culture beside a shallow sea, low, flat, humid, with heavy runoff of abundant rainfall.

2. Despite Hernando de Soto's report to his King that peninsular Florida was all swamp and sandspit, unfit for human habitation, this coastal area is now densely populated, yet, according to demographers and growth analysts, is still in the early stages of growth.

3. It is not necessary to reiterate the warnings, some muted and some shrill, about the destruction man can bring upon himself through uncontrolled exploitation of his environment. It is necessary only to point out that our unique environment along the Florida Gulf Coast is generally believed to be more frangible, existing in more delicate and sensitive balance because the unique environment has led to the development and interdependence of specialized life forms which cannot "forgive" very subtle changes in this rare mix of climate, rainfall, salinity, nourishment, etc., and to point out that nowhere else on the planet is there a similar environment being subjected to the warps and strains of technological society in a geometric increase.

4. Our system of government is designed to be responsive to the will of the majority. However, in the area of protection of the environment, the will of the majority often comes into conflict with the property rights of individuals. If an area in any estuarian county is zoned for high rise residential structures, and if ordinances permit small waste treatment plants with outfall into the bay or gulf of effluent after second stage treatment, county commissioners and city commissioners cannot legally deprive the property owner of the right to proceed

merely because the majority of the citizens who appear at a public hearing are opposed to the proliferation of such land development enterprises.

5. At countless public hearings along this coast, conservation groups have brought in "experts" in a variety of disciplines, hoping thereby to provide local governmental bodies with sufficient factual information to justify a negative ruling on the basis of potential damage to public health, adjacent private property, etc. Though these individuals have often been highly qualified and have held responsible positions with such institutions as the University of Florida, Florida State University and the University of Miami, their expert testimony has, with very few exceptions, been based upon general concepts and over-all research in environmental matters rather than upon a continuing complex of research of this unique juncture of lowlands and sea. Consequently, not only has the testimony been weakened by too many qualifying words and too few facts, but the other parties at interest have been able to induce others "experts" to give opposing testimony of an equivalent plausibility.

6. If there is no institution beyond the reach of political and commercial influence involved in continuing objective factual research on the effects of man upon his environment, then not only are we ignorant of how much damage is being caused and how it is being caused, but we are depriving elected officials of that kind of reliable and incontestable data necessary to decision-making in environmental cases, and necessary for their defense in the event of a suit for damages in those cases where an apparent property right has been suspended for the good of the whole community

A RESPONSE TO THE PROBLEM

In attempting to devise an answer to what is a clearly perceived -- though incompletely defined -- problem, it becomes evident that there are three major needs. Before examining them in detail, however, it must be made clear that we are not seeking economic, political, or even necessarily social responses, but technical, scientific facts, data which can be the foundation on which a wide variety of decisions could be wisely made.

The three needs are: (1) an institution which is independedt of control or influence by actually or potentially vested interests, scientifically oriented and capable, and permanently located in the heart of the area to be studied; (2) a group of intelligent, concerned, diverse and independent people, to serve not only in an advisory capacity but also as agents for support and, ultimately, as transmitters of the scientific data accumulated to the appropriate action groups, who may in turn be able to initiate and carry out specific programs designed to protect the area under study; and, (3) funds to make all of this possible, through the design and implementation of a rational program of research and study. Each of these needs can be further explained.

1) New College is an independent coeducational college, with highly qualified students and a superb faculty. The College has a lively and productive science program, laboratories and equipment adequate for quite sophisticated research, and well-established library facilities for scientific studies. New College, located as it is in Sarasota, shares the same ecological concerns as the community, and it tends to attract students and faculty who are committed to programs of teaching and study which have a potential for improving the quality of life for Man. In

the context of this problem, the College could assume the function of a coordinating research center, a place where data could be available from past research and an operating data-gathering agency, responding with appropriate projects to needs for knowledge as they become evident. Finally, the College -- with the involvement of outside experts -- could become an independent evaluator, information bank and intermediary to link potential decision-makers with the technical data on which to base their decisions.

2) The Advisory Committee is perceived as a group of stimulators and catalysts, stimulators in the sense that they could serve to introduce new projects, new problems and new proposals; catalysts, in the sense that they could serve as non-technical intermediaries between the scientists and the community. Their presence would tend to assure that the knowledge which was being acquired was channeled to those who could act on it, thereby avoiding one of the commonest pitfalls of the "pure scientists", who too often take a stance as observers and researchers interested only in the scientific phenomena and quite unconcerned with its relationship to people's lives. We do not want to preside over the death of an area, taking note of the interesting things which happen, but rather to be in a position to relate what is -- or may be -- happening to measures men can take to stop them, if they are threatening, or aid them if they are beneficial. This could best be done by a non-aligned, publicly recognized and personally concerned group of area residents. (A list of suggested members of such a group is appended to this report. It is neither exclusive nor inducive, but has been prepared to demonstrate the kinds of persons we have in mind.)

3) The funding of a project which is viewed as a more or less permanent activity of College and community will necessarily be of varying kinds. The College, obviously, will continue to devote a portion of its normal operating

budget to such activities. (See the attached list of projects already undertaken as a part of the "normal" program.) Other agencies, both governmental and private, will be brought into supporting roles. (Again, see our list for cases of already funded projects.) It is critically important that moral and financial support come from a broad spectrum of the public sector, and to that end the College has already begun to accept gifts and pledges towards the "first phase" funding of this permanent back-stopping of its efforts, aiming at an immediate fund of about $250,000, and an ultimate goal of one million dollars.

Of major need, nonetheless, are immediate "seed money" funds to upgrade both the quantity and quality of projects to be attacked right now. (Beginning, in fact, no later than April of this year.) Such funds, given the urgency of the problem, should be of two sorts. First, there is need for immediate support for projects which could be launched with a sense of genuine urgency. (Appended is a list of a few that have been developed but have not been carried out for lack of funds. Many others are in process and still others must be formulated.) In a later section of this report, we will spell out the details of this immediate need.

Secondly, and perhaps more important in the long run, is the need for the major fund, participated in by a broad sector of this community, designed to provide a permanent base of support for the survival studies suggested by this proposal. We believe this fund should ultimately approach a million dollars, that it should be one to which funds could be added from a broad base of participation in perpetuity and from which money could be committed to meet emergent needs as they surfaced. Details of this fund are also spelled out in a later section of this report.

A PROGRAM

1) New College proposes to undertake a program of research activities designed to produce a maximum of useable information about the estuarine system we know as greater Sarasota Bay. It further suggest that such studies, in all probability, will ultimately have to include serious consideration of the water and water-related areas from Charlotte Harbor to Tampa Bay, an eco-system of which Sarasota Bay forms a central and major part.

2) To implement this proposal, the College proposes a focusing of its research energies on scientific data-gathering and analyzing efforts directly related to the problem of the survival of the Bay area. It further proposes to strengthen its already significant faculty resources to this end, and to evolve an information retrieval system which will make readily available all known facts about the area which are relevant to this problem. (There is appended a list of present faculty members and their skills and interests which relate to this problem.)

3) New College also proposes to utilize its students, working as individuals or in teams, under faculty supervision, to provide a manpower source for the massive job which has to be done, much of it consisting of laborious and detailed samplings, measurements and tests, well adapted to the learning needs of students and well within their capabilities. This is a rich resource, one too often ignored, because students combine an abiding concern for their environment with a thirst for both knowledge and involvement in the acquisition of new knowledge.

4) Finally, New College proposes to assume the stewardship of a fund, to be called the Gulf Coast Environmental Studies Fund, designed to be a fund which functions as an endowment, specifically dedicated to the continuing support of

studies related to a deeper scientific understanding of the environmental phenomena which affect -- or could affect -- the quality of human life in our area.

It is anticipated that a Citizens Advisory Committee will be formed and that among its first obligations would be consideration of the priorities to be assigned to various areas of investigation. For obvious reasons, the researchers themselves would have to determine the feasibility and appropriateness of any given research task. Professor John Morrill (see attached biographic sketch and list of publications) has agreed to serve as the scientific director-coordinator of this project. As a senior, tenured faculty member, Chairman of our Natural Sciences Division and well-known civic-minded scientist, specializing in marine biology, he is highly qualified for this responsibility.

New College requests support from the Selby Foundation for the four categories listed above, according to the following schedule: (See appended budget proposal)

1) Planning and preliminary research design; assembling of information, studies, maps, aero-photos, etc. and "tooling up" for full-scale operations. This will require correspondence, travel, purchase of materials, setting up the data-bank system and surveying the dimensions of the problem. Although much of this task has been begun, it will be necessary to establish precise project parameters and determine the resources which can be applied to the solution of the problem. The result should be a four or five-year plan, flexible enough to allow for the introduction of new problems, but well enough designed to permit proper planning.

2) The employing of an additional faculty member-researcher, with exclusive commitment to this project. Acquisition of materials needed to backstop his work. Staff and technical support. Support for publication and diffusion of materials produced. Some added support for other faculty members involved in research related to this project.

3) Grants in support of students involved in the day-to-day operations of the researhh program. (These amounts are based on N.S.F. grants previously awarded to students for similar projects.)

4) A grant of $100,000 toward the initiating of the Gulf Coast Environmental Studies Fund, designed to serve as a stimulus to the giving of others, many of whom have already indicated their interest with pledges or actual cash grants, with the objective of creating a broadly supported financial base of at leaso one million dollars, thus assuring the permanence of the effort this proposal is designed to achieve. (The Foundation, in considering this specific request, should be aware that its award would, in effect, generate another $250,000 from the Ford Foundation, all of it to be spent in this community and some of it destined to strengthen still further the College's capacity to fumntion effectively in the scientific area which is the subject of this proposal.) It is worthy of note that the scope and breadth of this support is already evident, but also that a significant grant from the Selby Foundation could well serve as a stimulus for the giving of many which would otherwise not be dedicated to this critical use.

BUDGET REQUEST

NOTE: Two basic principles underlie this budget. One is that the urgency of the problem cannot be overstated. The other is that the permanency of the effort must be assured. For this reason, the budget has been broken down into two categories; those things which must be begun at once, and the needs implied by this fact, and those things which must be assured in the future, and a way to assure that.

One other point must be clarified. The College is already in the process of seeking other support from the community. Some of this will come at once -- and can therefore be used to defray immediate needs -- which could result in some diminishment of the requests related in the budget. Some of these monies, however, may be directed toward the longer-range build-up of the working fund we ultimately seek, and these, although they would be greatly stimulated by a Selby Foundation "seed grant", would not reduce the need for immediate action support.

A. Immediate Needs: (See sections above)

Category I

a) Personnel Professor John Morrill, Project Director Spring Term, 1/3 salary	$ (3,000.00)*		
b) Travel by Director and staff associates to: Research Centers (Gainesville, Tallahassee, Washington, D.C., Miami, etc.)	750.00		
c) Acquisition Materials: Maps, photos, marine charts, published studies, reprints, unpublished papers	1,200.00		
d) Information retrieval system Consultation, system design, materials	800.00		
e) Technical & Professional Consultants 20 days @ $100.00 per diem, plus travel	4,000.00		
Category I Total:	$ 6,750.00		
Sub Total:		$ 6,750.00	

Category II

Salary benefits and some research support for one senior research professor. Academic year 1972-73 (and perhaps summer 1972). A senior and extremely well qualified person is available. Former Florida scholar, familiar with estuarine ecology, knows this area and the history, literature, etc. of earlier scholarship. Widely published specialist in shallow-water marine biology.	$ 25,000.00		

Category II (cont'd)

Materials and equipment to support research		$ 4,000.00	
	Category II Total:	$ 29,000.00	
	Sub Total:		$ 35,750.00

Category III

Student grants-in-aid. To begin part-time in the Spring of 1972, continue full-time in the Summer of 1972, and throughout academic year 1972-73.

10 students - 10 weeks @ $30.00 per week, part-time	Spring 1972	$ 3,000.00	
10 students - Full-time @ $75.00 per week, 10 weeks	Summer 1972	7,500.00	
10 students - Part-time @ $30.00 per week - 10 weeks	Fall 1972	3,000.00	
10 students - Part-time @ $30.00 per week - 10 weeks	Winter 1973	3,000.00	
10 students - Part-time @ $30.00 per week - 10 weeks	Spring 1973	3,000.00	
Expendable materials to support above		1,200.00	
Permanent equipment to support above		4,400.00	
Vehicles and transportation (land)		3,800.00	
Boats and transportation (water)		(5,400.00)*	
	Category III Total:	$ 28,900.00	
	Sub Total:		$ 64,650.00

Category IV

$100,000 as "seed money" to stimulate the giving of others, as outlined above, towards the goal of a one million dollar fund, functioning as endowment, to assure the permanency of this effort and to establish its status as a serious community-wide commitment to the concept of a healthy satisfying environment for this area.

TOTAL IMMEDIATE REQUEST:	$164,650.00

B. Second Year Needs

1973-74

Research

Salary support. One scholar for the period, plus benefits and research support.	$ 25,000.00	
Outside consultants: 20 @ $100.00 plus travel	4,000.00	
Student research grants (as above)	20,000.00	
Expendable supplies	1,200.00	
Equipment	4,000.00	
Publications costs	2,500.00	
Total, 1973-74:	$ 56,700.00	
GRAND TOTAL:		$221,350.00

1974-75

It is assumed that by this time the Fund will have reached a level where it can produce income sufficient to meet the further needs of the program in perpetuity.

*Starred items will be paid by New College and, though they represent direct expenses of the overall program, they are not included in the totals in this request.

RESEARCH PROJECTS

SARASOTA BAY AND VICINITY

1) Hydrography

a) Macro and micro current systems of Bay and adjoining areas.

b) Circulation patterns in dead end, versus open ended canals (i.e. Grand Canal); mangrove lagoons.

c) Sediment transport along beaches.

d) Sediment deposition and composition in parts of Bay.

e) Physical characteristics survey - seasonal variations in salinity, temperature, dissolved oxygen, turbidity, light penetration.

f) Turbidity produced by power boats.

g) Dredge areas and boat channels.

2) Chemical characteristics of Bay system

a) Geographic and seasonal variations in 1) pollutants, 2) dissolved organics, particularly carbon, 3) coliform bacteria counts, etc. - microbiology.

Biological Studies

1) Inventory of List #6 and seasonality of:
   a) Marine bottom invertebrates
   b) Fishes
   c) Phytoplankton
   d) Zooplankton
   e) Algae
   f) Sea grasses

   Formation of annotated check lists that contain quantitative data. Ultimately to be computer programmed and tied in with the U. S. Bureau of Commercial Fisheries Gulf of Mexico Inventory program directed by Dr. McNulty. Also checkpoint Devilfish Key area, Charlotte Harbor.

2) Comparison of bottom community and plankton community organization from Sarasota Bay to Charlotte Harbor.

Biological Studies (cont'd)

3) Transplantation and survival studies - clams, sea urchins to different parts of Bay.

4) Biological as well as chemical assay systems for marine environment quality - i.e. sea urchin embryos versus different waters. Phytoplankton laboratory cultures, etc.

5) Waterfron developmental ecology:
   a) Ecological studies before, during and after construction
   b) Seawall marine communities
   c) Mangrove transplantings and management - Environmental esthetics
   d) Waterfront construction and dredge and fill operations - alternatives, etc.

6) Marine bird life:
   a) Censuses - demographic studies
   b) Breeding colony areas
   c) Feeding grounds
   d) People and birds - tolerances - behavorial ecology
   e) Help the University of South Florida with pelican project

7) Dolphin studies:
   a) Behavorial ecology in Bays
   b) Biology, etc.

8) Fisheries - Commercial and Sport:
   a) Censuses - economical and social
   b) Artificial reef programs in the Bay

9) Pollution studies:
   a) Marinas
   b) Domestic
   c) Motor boats

10) Field surveys for interested and concerned groups - conservationists, city planning, county planning, health and pollution control agencies, developers, etc.

INDEPENDENT STUDY PROJECTS AND TUTORIALS

1. Gary Montin (Summer 1971)
   Phytoplankton found in Sarasota Bay during the month of August

2. Paul Carlson (Winter 1970)
   Biochemical oxygen demand - in Sarasota Bay and Whitaker Bayou

3. Sven Donaldson (Winter 1968)
   Observations on a seawall intertidal community at the Sarasota Yacht Club

4. Barbara Beamon (Winter 1970)
   Vegetational succession of the sister keys and adjoining spoil islands, Sarasota Bay

5. David Zube (Winter 1968)
   The effects of "progress" on commercial fishing in the Sarasota-Manatee area

6. Earle Barnhart (Winter 1969)
   A hydrographic study of the New College grass flats

7. Sheryl Litwin (Spring 1970)
   Vegetational maps of four spoil islands including Otter Key in Sarasota Bay

8. Fred Ayer, Cynthia DeNavarez, Bryan Reid (Fall 1971)
   Investigation into sources of water pollution in two counties

9. Fred Ayer (Current)
   Analysis of phytoplankton collections from the intracoastal waterway between Tampa Bay and Charlotte Harbor

10. Deborah Rabinowitz (Winter 1969)
    Mangrove ecology and dredge and fill legislation

11. Thomas Mayers (Fall 1971 and Current)
    Biology of mangroves and mangrove culture

12. Kennard Monick (Fall and Winter 1969)
    Algae growth on artificial sea grasses versus natural marine grass on the New College grass flats

13. Diana Graves (Summer 1968)
    Artificial reefs

14. Paul Becker, Joan Matthews, Tod Koehler (Winter 1970)
    The biological developement of a tire-concrete artificial reef during its first four weeks in the marine habitat

Student Studies:

1. Paul Carlson (Project Director)
   An ecological analysis of spoil islands in Sarasota Bay N.S.F. Undergraduate Environmental Studies Grant ($10,800, September-December 1971). Involved 10 students in biology, art, natural history and general studies.

2. Gary Montin (Project Director)
   Biological assay of environmental pollutants in embryonic development. N.S.F. Undergraduate Environmental Studies Grant. Submitted: October 1971 ($5,830 for June-August 1972) 5 students to be involved.

Senior Theses:

1. Shellie Piller (1970)
   The effects of pollution in the growth of diatoms.

2. Marie Blanche Benedict (Current)
   The effects of pollutants on the development of invertebrate embryos.